

QL Boat Trim System



(ENG)

QL Manual & Automatic Boat Trim System

User instructions

(GER)

QL Manuelles und automatisches Bootstrimmsystem

Bedienungsanleitung

(FRE)

Système manuel et automatique de correction d'assiette QL

Instructions d'utilisation

(SPA)

Sistema Manual y Automático de Trimado de Embarcación QL

Libro de instrucciones

(ITA)

QL Sistema Manuale e Automatico correttori di assetto per imbarcazioni

Istruzioni per l'operatore

(SWE)

QL Manuellt & automatiskt båtrimssystem

Användaranvisningar

(DUT)

QL Handmatig & Automatisch boottrimmsysteem

Gebruikersinstructies

(DAN)

QL Manuel og Automatisk Båd Trim System

Instruktionsbog

(FIN)

Manuaalinen ja automaattinen QL-trimmijärjestelmä

Käyttöohjeet

(POR)

Sistema de Basculação QL Manual e Automático

Instruções de utilização

(GRE)

Χειροκίνητο & αυτόματο σύστημα τριμαρίσματος σκάφους QL

Οδηγίες χρήσης

(TUR)

QL Manual ve Otomatik Tekne Denge Sistemi

Kullanıcı talimatları

(RUS)

Система ручного и автоматического трима QL

Инструкции по эксплуатации



Marine Accessories
By Volvo Penta

IMPORTANT!

This batch with its accompanying instructions is produced for Volvo Penta's service workshops, boat-builders, machine manufacturers and other authorized workshops which have personnel with qualified professional training.

The installation instructions are only produced for professional use and are not intended for non-professional use. Volvo Penta will not assume any liability whatsoever for damage incurred, either damage to materials or personal injury, which may result if the installation instructions are not followed or if the work is carried out by non-professional personnel.

WICHTIG!

Dieser Satz mit vorliegender Einbauanleitung ist für Volvo Penta Kundendienst-werkstätten, Werften, Maschinenbauer und für andere ermächtigte Werkstätten mit beruflich geschultem Personal vorgesehen.

Die Einbauanleitung ist nur für den berufsmäßigen Gebrauch vorgesehen und nicht für unprofessionelle Anwendung gedacht. Volvo Penta übernimmt nicht die geringste Haftung für irgendwelchen Schäden an Personen oder Sachen, die als Folge einer Nichtbefolgung der Einbauanleitung oder wegen Ausführung der darin beschriebenen Arbeiten durch nicht beruflich geschulte Personen entstehen.

IMPORTANT!

Ce kit, avec instructions de montage, est destiné aux ateliers de service Volvo Penta, aux constructeurs de bateaux et autres ateliers de construction agréés avec un personnel qualifié.

Les instructions de montage sont exclusivement conçues pour une utilisation professionnelle. Volvo Penta se dégage de toute responsabilité pour d'éventuels endommagements, corporels ou matériels, résultant du non respect des instructions ou d'un travail effectué par un personnel non compétent.

IMPORTANTE!

El presente juego con las instrucciones de montaje se destina a los talleres de servicio Volvo Penta, constructores de embarcaciones y máquinas y a otros talleres autorizados que cuentan con personal capacitado.

Las instrucciones de montaje están destinadas únicamente para uso profesional, por lo que Volvo Penta no aceptará responsabilidad alguna por cualquier daño, tanto personal como material, resultado de no haber seguido las instrucciones de montaje o de haber sido efectuado el trabajo por personal que no está debidamente capacitado.

IMPORTANTE!

Questo kit e le relative istruzioni di montaggio sono stati realizzati per le officine di servizio Volvo Penta, i cantieri, i fabbricanti di macchine e tutte le altre officine autorizzate il cui personale ha ricevuto un addestramento qualificato e specializzato.

Le istruzioni di montaggio sono state redatte esclusivamente per uso professionale e non sono adatte all'uso non professionale. La Volvo Penta non si assume alcuna responsabilità per eventuali danni alle cose o alle persone, derivanti da trascuratezza nel seguire le istruzioni di montaggio oppure dall'esecuzione dei lavori da parte di personale non qualificato.

VIKTIGT!

Denna produkt med föreliggande monteringsanvisning är framtagen för Volvo Pentas serviceverkstäder, båtbyggare, maskintillverkare och övriga auktoriserade verkstäder som har personal med kvalificerad fackutbildning.

Monteringsanvisningen är enbart framtagen för yrkesbruk och är inte avsedd för icke yrkesmässig användning. Volvo Penta påtager sig inget som helst ansvar för eventuella skador, såväl materiella som personskador, som kan bli följden om monteringsanvisningen ej följs, eller om arbetet utförs av icke yrkeskunnig personal.

BELANGRIJK!

Deze set met de bijgevoegde montage-aanwijzing is ontwikkeld voor de werkplaatsen van Volvo Penta, botenbouwers, machinefabrikanten en overige bevoegde werkplaatsen, die personeel hebben met een gekwalificeerde vakopleiding.

De montage-aanwijzing is alleen ontwikkeld voor professioneel gebruik en is niet bedoeld voor niet-professioneel gebruik. Volvo Penta neemt geen enkele verantwoordelijkheid op zich voor eventuele schade, zowel materiële schade als persoonlijk letsel, die het gevolg kan zijn als de montage-aanwijzing niet wordt gevolgd, of als het werk wordt uitgevoerd door niet-vakkundig personeel.

TÄRKEÄÄ!

Tämä sarja ja asennusohje on tarkoitettu Volvo Pentan huoltokorjaamoille, veneenrakentajille, konevalmistajille ja muille valtuutetuille korjaamoille, joiden henkilökunta on saanut pätevän ammattikoulutuksen.

Asennusohje on tarkoitettu ainoastaan ammattikäyttöön. Volvo Penta ei vastaa mahdollisista materiaali- tai henkilövahingoista, joita asennusohjeen laiminlyöminen tai ammattitaidottoman henkilökunnan suorittama asennustyö voi aiheuttaa.

IMPORTANTE!

Este jogo, juntamente com as respectivas instruções de montagem, foi concebido para as oficinas de serviço da Volvo Penta, construtores navais, construtores de máquinas e outras oficinas autorizadas, com pessoal devidamente formado.

As instruções de montagem foram concebidas unicamente para utilização profissional e não se destinam a utilização não profissional. A Volvo Penta não se responsabiliza por quaisquer danos eventuais, tanto materiais como pessoais, que possam resultar no caso de as instruções de montagem não serem seguidas, ou se os trabalhos forem executados por pessoal não profissional.

VIGTIGT!

Dette sæt med tilhørende monteringsvejledning er blevet udviklet for Volvo Pentas serviceværksteder, bådbyggere, maskinproducenter og andre autoriserede værksteder, som har medarbejdere med kvalificeret, faglig uddannelse.

Monteringsvejledningen er udelukkende beregnet til professionel anvendelse og ikke til hobby- eller fritidsbrug. Volvo Penta påtager sig intet som helst ansvar for eventuelle skader på såvel materiel som personer, som kan være en følge af at monterings-vejledningens anvisninger ikke blev overholdt, eller hvis arbejdet blev udført af ikke-professionelt personale.

Σημαντικό!

Η παρτίδα αυτή μαζί με τις οδηγίες που τη συνοδεύουν, παράγεται για τα συνεργεία της Volvo Penta, για κατασκευαστές σκαφών, κατασκευαστές μηχανημάτων και άλλα εξουσιοδοτημένα συνεργεία τα οποία απασχολούν εξειδικευμένο, κατάλληλα εκπαιδευμένο προσωπικό.

Οι οδηγίες εγκατάστασης παράγονται μόνο για επαγγελματική χρήση και δεν προορίζονται για χρήση από ερασιτέχνες. Η Volvo Penta δεν αναλαμβάνει καμία ευθύνη για ζημιές, είτε σε υλικά είτε σε άτομα, η οποία μπορεί να συμβεί εάν δεν τηρηθούν οι οδηγίες εγκατάστασης, ή εάν οι εργασίες δεν γίνουν από επαγγελματίες.

ВАЖНО!

Этот пакет вместе с сопроводительными инструкциями разработан для сервисных станций, судостроительных и машиностроительных предприятий, а также авторизованных мастерских Volvo Penta, персонал которых прошел необходимое профессиональное обучение.

Инструкции по установке предназначены исключительно для специалистов. Volvo Penta отказывается от всех видов ответственности за любые повреждения материалов или травмы, возникшие по причине выполнения работ неквалифицированными лицами.

ÖNEMLİ!

Bu seri, yanında gelen talimatlarla birlikte, kalifiye profesyonel eğitim almış personeli bulunan Volvo Penta yetkili servisleri, tekne üreticileri, makine üreticileri ve diğer yetkili servisler için üretilmiştir.

Kurulum talimatları sadece profesyonel kullanım hazırlanmıştır ve profesyonel olmayan kullanım için değildir. Volvo Penta, kurulum talimatlarına uyulmaması veya çalışmanın profesyonel olmayan personel tarafından gerçekleştirilmesi durumunda, malzemelerin hasar görmesi olsun yaralanmalar olsun, meydana gelebilecek zararlardan hiçbir şekilde sorumlu tutulamaz.

LANGUAGE

English	4–8
Deutsch	9–13
Français	14–18
Español	19–23
Italiano	24–28
Svenska	29–33
Nederlands	34–38
Dansk	39–43
Suomi	44–48
Português	49–53
Ελληνικά	54–58
Türkçe	59–63
Русский	64–70

CONTENTS

Using the system.....	5
Setting the desired running trim.....	6
Functions.....	6
Maintaining the system.....	7
Fault codes.....	7-8

Using the system

NOTE! Before any settings are made, ensure that QL Boat Trim System calibration has been carried out. Refer to the QL Boat Trim System installation instructions.

Calibration mode

The control panel has five buttons. Use the top button to lower the blades in parallel (bow down). Use the bottom button to retract the blades in parallel.

(bow up). **Refer to Fig. 1.**

Use the left button to lower the starboard blade and retract the port blade (list to port). **Refer to Fig. 2.**

Use the right button to lower the port blade and retract the starboard blade (list to starboard). **Refer to Fig. 3.**

Blades start moving when a button is pressed and stop when it is released. The control panel LEDs have four levels of light intensity and an off mode. Press the left and right buttons simultaneously for approx. 1 second to reduce LED light intensity one level. Keep the buttons held down to reduce the intensity further every half second. When LED light intensity reaches off mode, it reverts to full intensity again and the cycle is repeated until the buttons are released. Release the buttons to stay at the chosen LED light level. If several panels are connected to the system, only the panel being adjusted is affected. If current has been switched off the LEDs light up at the brightest level when current is switched on again.

When the engine is stopped (current to the panel is cut), the blades retract fully.

NOTE! If several helm stations are installed, the engine must be stopped from the main helm station (the station to which the red cable is connected to the 12 V or 24 V system).

Automatic mode

When the system is in automatic mode the A LED is lit (green light) and the ACU controls the interceptor blades so that the required running trim setting is achieved and maintained.

When automatic mode is on, all LEDs on the control panel are extinguished and no interceptor blade position indication is provided. Only the A LED is lit to show that automatic mode is activated. The helmsman need pay no attention to the running trim, but can instead concentrate on more important tasks such as steering and navigating the boat in a safe manner.

Press the A button to exit automatic mode; the A LED will be extinguished. For safety reasons, automatic mode will also be disconnected whenever any of the four manual buttons is depressed.

When the QL Automatic Boat Trim System is switched on it will start in the same mode it was switched off in.

Fig. 1

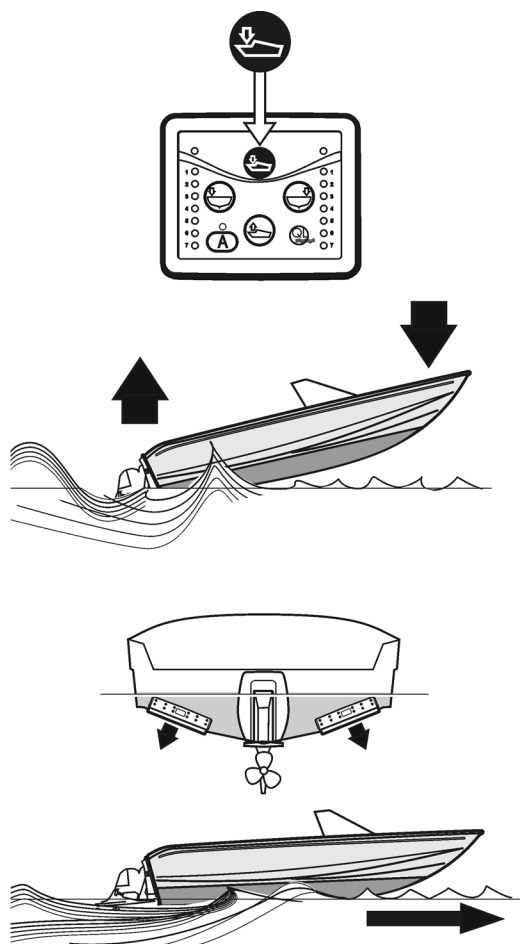


Fig. 2

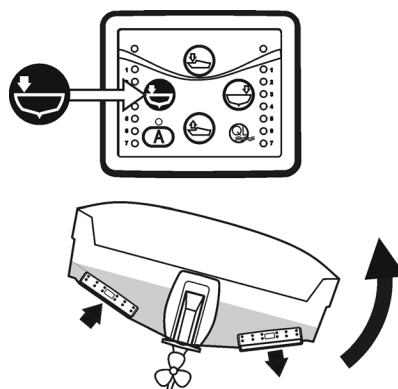
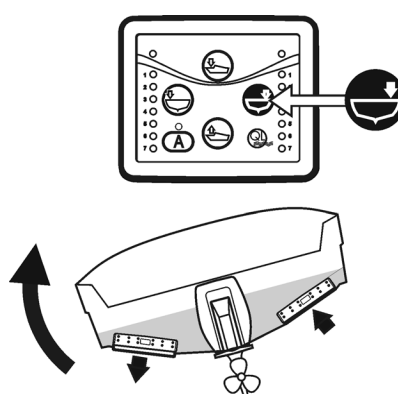


Fig. 3



Setting the desired running trim

Run the boat at cruising speed.

Trim the boat manually until the desired running trim is achieved.

Press button A and hold it down for more than 5 seconds, but less than 15 seconds.

Refer to Fig. 4.

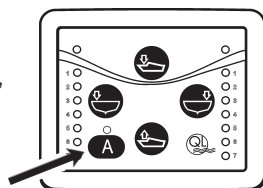


Fig. 4

When the setting is stored in the memory, the 4 LEDs in the upper and lower corners will flash as confirmation. Release the button; the lamps will stop flashing. **Refer to Fig. 5.**

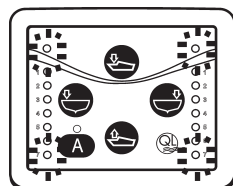


Fig. 5

Once the running trim has been set, only button A need be depressed to activate the automatic trim function. The LED above button A will light up. **Refer to Fig. 6.**

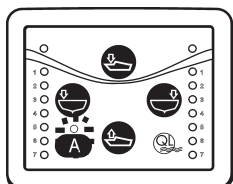


Fig. 6

This procedure need only be carried once as the running trim setting is stored in the control unit even if the main switches are switched off.

Functions

The QL Automatic Boat Trim System provides perfect trim for best comfort and fuel economy even if the wind speed or direction changes, or weight distribution on board is altered. The system compensates whenever running trim deviates from set fore-and-aft and thwartships values.

Control panel

The control panel LEDs have four levels of light intensity and an off mode. Press the left and right buttons simultaneously for approx. 1 second to reduce LED light intensity one level. Keep the buttons held down to reduce the intensity further every half second. When LED light intensity reaches off mode, it reverts to full intensity again and the cycle is repeated until the buttons are released. Release the buttons to stay at the chosen LED light level. If several panels are connected to the system, only the panel being adjusted is affected. If current has been switched off the LEDs light up at the brightest level when current is switched on again.

The control panel A LED has three levels of brightness. Press the left and right buttons simultaneously for approx. 1 second to reduce A LED light intensity one level. Keep the buttons held down to reduce the intensity further every half second. Release the buttons to stay at the chosen LED light level. If several panels are connected to the system, only the panel being adjusted is affected. If current has been switched off the A LED will light up at the brightest level when current is switched on again.

When the engine is stopped (current to the panel is cut), the blades retract fully.

NOTE! If several helm stations are installed, the engine must be stopped from the main helm station (the station to which the red cable is connected to the 12 V or 24 V system).

Turns

During turns the boat will list inwards. The GPS unit registers the course change (the turn) and the ACU ensures no list compensation is made as long as the boat remains in the turn. Only fore-and-aft compensations are made. When the boat is on a fixed course again, thwartships (roll) compensations will be made. This characteristic has been incorporated into the system to ensure optimal running trim when the boat is on a straight course again. The ACU will then continue to sense and correct the running conditions according to the new conditions.

Speed

When the QL Automatic Boat Trim System is activated and speed drops below 5 knots for more than 3 seconds, the interceptor blades are retracted fully.

The QL Automatic Boat Trim System compensates fore-and-aft trim at speeds above 6 knots.

The QL Automatic Boat Trim System reaches full functionality at speeds above 8 knots, when both fore-and-aft and thwartships compensations are made.

Extreme conditions

The QL Automatic Boat Trim System is self-adjusting in relation to prevailing sea conditions. In calm waters it compensates for changes faster than in rough waters.

In very heavy seas with high waves and strong wind we recommend manual control for best comfort.

Autopilot

The QL Automatic Boat Trim System and an autopilot may, depending on the type of boat, have difficulty working together. When using an autopilot, it may be necessary to run the QL Automatic Boat Trim System in manual mode.

Volvo Penta Powertrim Assistant

Volvo Penta Powertrim Assistant and the QL Automatic Boat Trim System may be used simultaneously. In certain circumstances it may be necessary to set the Powertrim Assistant in standard mode for best results.

GPS status

The ACU has two integral LEDs, one yellow and one green. The green LED indicates GPS signal reception status (refer to the table below). The yellow LED indicates fault causes according to the descriptions in **Fault codes, ACU**.

	Status	Green indicator
1.	No GPS reception	LED lit
2.	GPS reception OK	LED flashes each time new GPS data received.

Maintaining the system

Check all mountings that penetrate the hull if water has entered in the vicinity of the interceptor units. Biological fouling may vary from almost non-existent to very severe depending on water conditions prevailing where the boat is in use.

Where necessary, paint the outside of the interceptor units with ant-fouling paint. **NOTE!** Do not paint moving parts. e.g. the blades!

Extend the interceptor blades and carefully remove biological fouling if the boat has been in harbor for a longer period and fouling is severe. **Note:** Do not use any kind of high pressure washer. **Note:** Do not use aggressive solvents such as acetone, methanol, and corrosive acids etc.

NOTE! To ensure system functionality and maintain performance, the system must be calibrated once a year.

Keep these operator's and installation instructions together with the boat's operator's manual.

Fault codes

Certain fault codes are used to facilitate fault tracing in the case of system faults. When a fault code is registered the user is notified by certain control panel LEDs flashing. The following fault codes/flash notifications may be displayed.

– Fault code 1; Flashing: LEDs 1 and 2 on the port and starboard sides. Fault: Indicates that a button on one of the control panels is stuck. Action: Check that no button is depressed by mistake, e.g. by an object having been placed on a control panel.

– Fault code 2; Flashing: LEDs 3 and 4 on the port side. Fault: Indicates that no communication between the control unit and the port interceptor unit(s) has been detected. Action: Check that the cable(s) between the control unit and the interceptor unit(s) are connected properly. Check that the cable(s) are not damaged.

– Fault code 3; Flashing: LEDs 3 and 4 on the starboard side. Fault: Indicates that no communication between the control unit and the starboard interceptor unit(s) has been detected. Action: Check that the cable(s) between the control unit and the interceptor unit(s) are connected properly. Check that the cable(s) are not damaged.

– Fault code 4; Flashing: LEDs 6 and 7 on the port side. Fault: Indicates that the interceptor blade(s) on the port side are stuck and cannot attain the correct position. Action: Check that the interceptor blade(s) are not obstructed by biological fouling, mechanical damage etc. Clean or replace as necessary.

– Fault code 5; Flashing: LEDs 6 and 7 on the starboard side. Fault: Indicates that the interceptor blade(s) on the starboard side are stuck and cannot attain the correct position. Action: Check that the interceptor blade(s) are not obstructed by biological fouling, mechanical damage etc. Clean or replace as necessary.

– Fault code 6; Flashing: The two upper green LEDs. Fault: Indicates that no communication between the control panel and the control unit has been detected. Action: Check that the cable between the control unit and the control panel is connected properly. Check that the cable is not damaged.

– Fault code 7; Flashing: LED above button A. Fault: A) Indicates that no communication between the ACU and the control panel has been detected. B) Communication between the ACU and the control panel OK; other data / signals lacking.

Remedy:

7:0 A) Alt.1: No autotrim installed. Install autotrim. Alt. 2: Check that the cable between the ACU and the Boat Trim System is connected properly. Check that the cables are not damaged.

7:1 B) The ACU has no running trim setting. Set the running trim.

7:2 B) Data communication fault. Check that the cable between the ACU and the Boat Trim System is connected properly. Check that the cables are not damaged.

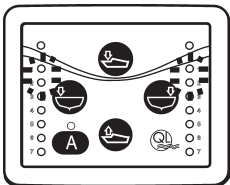
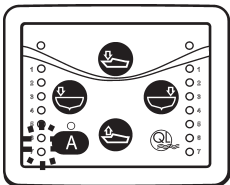
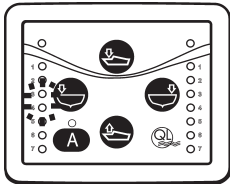
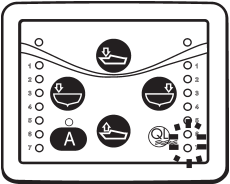
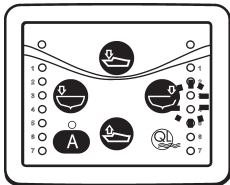
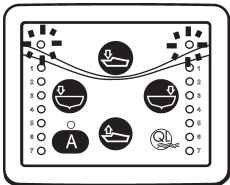
7:3 B) Internal ACU fault. Check the control unit installation.

7:4 B) No data from the GPS for more than 35 seconds (during normal operations) or more than 120 seconds during the start procedure. Check that the cable between the ACU and the GPS receiver is connected properly. Check that the cables are not damaged. Check the GPS receiver location/installation.

Fault code causes 7:1, 7:2, 7:3 and 7:4 are signaled by flash sequences from the green control unit LED. Refer to the table in the **Fault codes, ACU** section.

NOTE! If the system is in automatic mode and any of the fault codes 1 through 7 occur, automatic mode will be disconnected. Autotrim will revert to manual mode.

Fault codes, QL Boat Trim System

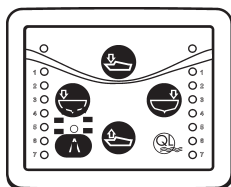
Fault code	Flash pattern	Fault code	Flash pattern
1 Button stuck		4 Blade stuck port	
2 No communication between the control unit and the port interceptor units		5 Blade stuck starboard	
3 No communication between the control unit and the starboard interceptor units		6 No communication between the control unit and the control panel	

Fault codes, QL Automatic Boat Trim System

7

A) No communication between the ACU and the control panel

B) Fault notifications from the ACU. Further information is provided by the ACU LED. Refer to the ACU fault code table.



Fault codes, ACU

EC	Status	Yellow indicator
7:1	The ACU has no running trim setting. (Set running trim)	1 flash every two seconds
7:2	Data communication fault.	2 flashes every two seconds
7:3	Internal ACU fault.	3 flashes every two seconds
7:4	No GPS data for more than 35 seconds (more than 2 minutes at start).	4 flashes every two seconds